



## **A Study On The Perceptions Of Teachers Towards Developing 21<sup>st</sup> Century Life Skills Among Secondary School Students In Visakhapatnam District**

**Dr. T. Sharon Raju** Associate Professor; Chairman, BOS in Education (UG) and Head, Department of Education, Andhra University, Visakhapatnam, A.P., India

**Harini Peta** Research Scholar, Department of Education, Andhra University, Visakhapatnam, A.P. India.

Received: 13/11/2024

Accepted: 15/03/2025

Published: 12/05/2025

### **ABSTRACT**

The world is undergoing rapid changes in the knowledge landscape. Life skills development has been a global concern of school curricula. United Nations International Children's Emergency Fund (UNICEF, 2012) shows that life skills education is an important vehicle to equip young people to negotiate and mediate challenges and risks in their lives and to enable their productive participation in society. Life skills include personal, interpersonal and cognitive skills that help people interact well, manage their emotions and make decisions for a safe and productive life. They help people develop the right attitude to think smartly, act wisely and live consciously. These skills boost a person's ability to thrive in the fast-paced, virtual world of the 21<sup>st</sup> century. As teachers are the cornerstone of this educational paradigm, there is an urgent need to develop in them a positive attitude and right perceptions towards life skills education with a view to foster competencies relating to life skills effectively among their students. The present study is an attempt to explore the perceptions of teachers towards developing 21<sup>st</sup> century life skills among secondary school students. The researchers used a well prepared and standardized questionnaire as the tool for collection of data from a sample of 250 teachers (50 Headmasters and 200 School Assistants) selected from 50 Secondary schools located in Visakhapatnam District of Andhra Pradesh using Stratified Random Sampling technique. Mean score values, standard deviations and independent t-tests were used for analysis of data. The findings of the study revealed that the demographic variables – Gender, Age and Teaching Experience have no influence on the perceptions of teachers towards developing 21<sup>st</sup> century life skills among secondary school students. The study suggested that in-service training should be provided to school teachers on life skills education.

**Key Words:** Life skills education, Secondary School Students, Perceptions, Social skills, Emotional Skills, Adaptive behavior.

### **INTRODUCTION**

Education is the tool through which our cultural values can be preserved and transmitted to the upcoming generations. It helps to liberate the masses from the clutches of ignorance and prejudices. It makes them aware of their fundamental rights and responsibilities towards their family, society and the nation at large. Education is an effective means of social reconstruction. It is fundamental for achieving full human potential; and developing an equitable and just society.

Education seeks to develop the innate capacities of the individuals. It is a potential tool for creating awareness among people and enabling them to lead a happy and peaceful life. Providing universal access to quality education is the key to India's continued ascent and leadership on the global stage in terms of economic growth, social justice and equality, scientific advancement; and cultural preservation. Universal high-quality education is the best way forward for developing and maximizing our country's rich talents and resources for the good of the individual, the society, the country and the world. The Government of India has taken an initiative to revamp the existing system; and to provide universal access to quality education on the foundational pillars of access, equity, quality, affordability and accountability in education with the introduction of National Education Policy (NEP)-2020 in the country. The Policy envisions an education system rooted in Indian ethos that contributes directly to transform India sustainably into an equitable and vibrant knowledge society by providing high-quality education to all; and thereby making India a global knowledge superpower (MHRD, 2020).

People are not born with all the knowledge and skills they need to navigate their way through life. A person's ability to make decisions, solve problems, think creatively and critically, communicate effectively, build interpersonal relationships, be self-aware and empathic, and cope with emotions and stress are essential to an individual's well-being, and are all taught and developed over time. A critical part of each person's journey to adulthood is learning these life skills and gaining confidence in utilizing them. Parents, community members, cultural leaders, educators, and peers are all sources for individuals to learn different skills in life that build their career during the crucial period of their adulthood. Eventually, they reach the time where they are expected to use the life skills they have learned to seamlessly integrate into society. Obviously, people will continue to learn and grow throughout their lifetime, but upon entering adulthood, society expects an individual to be capable of dealing with the demands and challenges of life while positively contributing to their community (Austin Riedeman, 2021). One of the issues society faces is that home life structures are constantly changing, leaving many adolescents without the guidance and support system at home to learn the necessary skills to thrive as an adult (Cassidy et al., 2018). If adolescents are not learning the life skills needed to deal with the demands of adulthood at home, they need to learn it from somewhere else. It is the school, particularly the secondary school, wherefrom they learn these skills to lead a happy and peaceful life. It is the primary goal of our education system to equip the students with the necessary skills to navigate their future life as independent and responsible members of society (Cassidy et al., 2018).

### **THE CONCEPT OF 'LIFE SKILLS'**

The capability to perform something efficiently is known as 'skill'. A skill is a learned ability to do something well. Hence, the qualities that individuals can develop to lead a successful life are known as 'life skills'.

**World Health Organization (WHO), 2007** defines **Life skills** as 'the abilities for adaptive and positive behavior that enable individuals to deal effectively with the demands and challenges of everyday life'. Here 'adaptive' means that a person is flexible in approach and is able to adjust to different circumstances; and 'positive behavior' implies that a person is forward looking and even in changing situations, can find a ray of hope. Others define life skills as behavioral, cognitive, or interpersonal skills that enable

individuals to succeed in various aspects of life. These skills are also known as Psycho-social skills, as they are psychological in nature and include thinking and behavioral processes (Hodge, Danish, & Martin, 2013).

Life skills include personal, interpersonal and cognitive skills that help people interact well, manage their emotions; and make decisions for a safe and productive life. Life skills help people develop the right attitudes to think smartly, act wisely and live consciously. These skills boost a person's ability to thrive in the fast-paced, virtual world of the 21<sup>st</sup> century.

## **BACKGROUND OF THE STUDY**

Formal education is expected to make a significant influence on how young people relate with others and make informed decisions about their lives (Kendeli, 2014; Brown, 2011). Life skills, being a part of formal education, entails decisions related to important issues of behavior such as interacting with the peers, health habits and sexuality (Prinsloo, 2010). According to World Health Organization (WHO, 2007), today's adolescents or young adults are facing many emerging challenges such as global poverty, suicide, population explosion as well as social, emotional, physical and psychological issues that affect their behavior adversely.

Botvin and Griffin (2014) admit that, students misbehavior such as late coming, avoiding classes, drug and substance abuse, bullying, love affairs, vandalism, assault on the school prefects, insult on educators, wearing the wrong school uniform, use of the mobile phone, smoking, writing or using foul language in class, work not done, class disruption and immoral acts, poses a challenge and required immediate and effective response from education policy makers and this gave birth to Life skills education in secondary schools.

Comprehensive Life Skills programme was first developed in England and later adopted in Canada, Australia and the United States (Botvin & Griffin, 2014). Life skills education then spread globally since its introduction in mid-1980s. In United Kingdom, life skills initiative was set up to counter young people's social problems like alcoholism, drug abuse, sexual abuse and juvenile delinquency (Christian, 2015). In U.S.A, Life skills programme, was modeled for prevention of substance abuse and Violence; while in Mexico, Cuba and Brazil, it was on prevention of adolescent pregnancy and irresponsible sexuality (Cornstem & Hunkins, 2010). In Thailand, the motive of life skills education was on prevention of rampant HIV and AIDS (Aparna, 2011). It was intended to be delivered as a stand-alone subject and part of the core curriculum. The areas it addresses are challenges of social norms and behaviors, providing young people with options for positive behavior and encourages the development of self-esteem, confidence and informed decision making.

## **LIFE SKILLS EDUCATION: MEANING AND NATURE**

Life skills Education is the process of learning and understanding life skills by individuals. It promotes mental well-being in young people and equips them with the competencies required to face the realities of life. By supporting mental well-being and behavioral preparedness, life skills education equips individuals to behave in a pro-social ways; and it is additionally health giving. Life skills development can also be seen in the context of training young minds for livelihood. Learning life skills will enable people to make

informed decisions, solve problems, think creatively and critically, communicate effectively, empathize with others, cope with problems and manage their lives in a healthy and productive manner. Consequently, life skills education can be seen as an instrument for empowering people.

According to UNICEF, "Life skills education is crucial for helping young people handle challenges and risks in their lives and to actively participate in society". Education has always had a significant influence on societies, serving as a crucial driver for positive changes in social, political, economic and cultural spheres. Teachers must not only impart knowledge but also serve as role models and facilitators of a learning environment that encourages exploration, creativity and emotional growth. This requires teachers to see situations from their students' perspective and build strong relationships; thereby improving their interpersonal skills. The teachers are required to develop necessary competencies in the profession in order to develop life skills among their students. These competencies not only contribute to their success in their professional career but also help to enhance their personal and social well-being.

Life skills education prepares students to:

- (i) **Navigate challenges:** Students learn to cope with stress, adapt to changes and overcome obstacles effectively. Life skills equip them with the knowledge, attitudes and abilities necessary to navigate the challenges of everyday life.
- (ii) **Foster innovation:** Students develop creativity and problem-solving skills towards innovation.
- (iii) **Embrace diversity:** Students understand and appreciate diversity that helps them thrive in multicultural environments.
- (iv) **Enhance personal development:** Life skills such as self-awareness, emotional regulation, and effective communication help students develop into well-rounded individuals.
- (v) **Future challenges:** Students will be able to resolve problems they come across in their future endeavors.

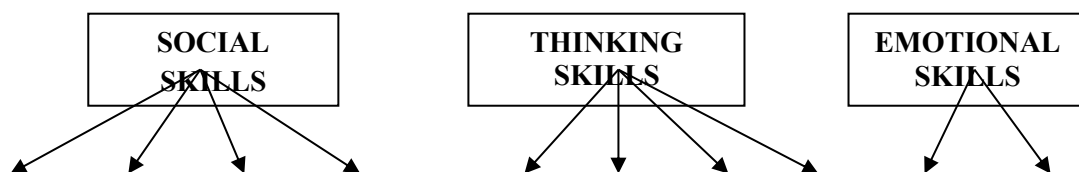
## CLASSIFICATION OF LIFE SKILLS

There are as many as ten core life skills that are expected to be developed among individuals. These ten life skills are classified into three major categories, viz., Social skills, Thinking skills and Emotional skills (Prajapati et al., 2017).

The classification of life skills is represented diagrammatically as follows:

### LIFE SKILLS

### LIFE SKILLS



Self-awareness  
Empathy  
Effective interpersonal relationships  
Creative problem solving  
Critical thinking  
Decision making  
Problem solving  
Coping with stress  
Emotions

## Classification of Life skills

### REVIEW OF RELATED STUDIES

A review of research studies carried out earlier by the other researchers in the field of life skills education has been conducted by the investigators; and a brief summary of the studies is provided below.

Ilaxi Bora (2024) conducted a study to examine the status of life skills education as envisaged by the National Education Policy (NEP)-2020. The paper aims to discuss how life skills education is addressed within the framework of the National Education Policy (NEP) 2020 in India. NEP-2020 aims to revolutionize the Indian education system by making it more holistic, flexible and multidisciplinary. This research paper explores the status of life skills education within the framework of the NEP 2020, examining its conceptualization, implementation strategies, and anticipated outcomes. The policy's focus on experiential learning, critical thinking, and socio-emotional development represents a significant departure from traditional rote-based learning methods, reflecting a paradigm shift towards more inclusive and learner-centric education. By integrating life skills into the curriculum, NEP-2020 seeks to equip students with essential 21<sup>st</sup> century skills necessary for dealing with the complexities of modern life.

It is felt by the researcher that understanding the integration and efficacy of life skills education under the NEP 2020 is crucial for educators, policymakers, and stakeholders who aim to equip students with the necessary tools to navigate and thrive in diverse real-world contexts. This study provides an in-depth analysis of the policy's provisions related to life skills, evaluates its alignment with global educational standards, and assesses its potential impact on the overall educational experience in India.

Itiha Mwachande et al. (2023) conducted a study to assess stakeholders' perceptions of enhancing students' acquisition of life skills' competencies through social science curricula. The study was carried out in Mbeya, Chunya, Mbarali, Rungwe and Kyela districts of the Mbeya region in Tanzania, using a case study research approach. The study sample was sixty-five (65) respondents. An interview was used as a data collection method. This study recognizes Geography, History and Civics as subjects in social science curricula. The application of the curricula lacks workshops, experiments and comprehensive fieldwork activities which could add value to students during the acquisition of life skills competencies. It was realized that the curricula are teacher-

centered whereby teachers prepare notes for students to copy. It is a banking model where the teacher deposits notes to students while students remain as passive receivers of everything from the teacher. Students are directed to copy, read and re-read notes for them to pass the national examination which helps to join the next level of schooling. It was noted that the curricula prepare bookish knowledge for students with no life skills' competencies. The curricula do not offer an opportunity for failure and those who pass the exams; but cannot proceed with further studies due to the extreme poverty of family. It is recommended that the ministry of education, science and technology is responsible for making sure that social science curricula are implemented practically.

Balasubramanian & Karuppaiyan (2019) conducted a study to explore the perception of high school students towards life skills and its influence on their academic achievement. Descriptive survey method has been adopted for the investigation. 440 students from 22 schools have been selected from Villupuram district using simple random sampling technique. These schools include Government, Government Aided and Self-financed types. The hypothesis were tested using differential statistical analysis and correlation analysis. The findings clearly show that the level of life skills education among high school students is moderate. The level of perception towards life skills education among high school students is also moderate. There is a significant difference between life skills education and its influence on academic achievement of high school students. Finally the study concludes that the perception of life skills plays a major role in the academic achievement of students.

### **NEED FOR THE PRESENT INVESTIGATION**

Life skills education is essential for secondary school students as it equips them with the knowledge, attitudes and abilities necessary to navigate the challenges of everyday life. These skills go beyond academic learning, helping students build resilience, adaptability and confidence.

According to the Kenya Institute of Curriculum Development (KICD, 2014), secondary school curriculum need to provide an education that enables total fulfillment of the four pillars of individual learners, viz., learning to know; learning to do; learning to be; and learning to live together. The curriculum should also provide the adolescent students with the necessary skills that allow them to adjust easily and smoothly to the rapid physical, emotional, mental and social changes (KICD, 2014). Life skills education is needed by the secondary school students who are normally adolescents in the age group between 14 and 19 years when students manifest an identity crisis that may have an impact on their mental make-up and attitudes towards people and circumstances (Kendeli, 2014).

As teachers are the main pillars of this educational paradigm, there is an urgent need to equip teachers with the necessary competencies of life skills education so as to enable them develop these skills, in turn, among their students. The National Education Policy (NEP)-2020 emphasizes the pivotal role of teachers in this transformative process, recognizing that the development of life skills among students is inextricably linked to the competencies that the teachers possess in life skills education. Hence, teachers are expected to possess a positive attitude and right perceptions towards life skills education.

From the literature review, it is understood that the number of studies conducted on life skills education is very much limited. Hence, it is felt by the researchers to conduct

a study on the perceptions of teachers towards developing 21<sup>st</sup> century life skills among secondary school students. The present investigation is an attempt in this direction.

### **OBJECTIVES OF THE STUDY**

- (i) To explore the perceptions of teachers towards developing 21<sup>st</sup> century life skills among secondary school students.
- (ii) To know the influence of gender, age and experience on the perceptions of teachers towards developing 21<sup>st</sup> century life skills among secondary school students.

### **HYPOTHESES OF THE STUDY**

The following hypotheses have been formulated for the present investigation:

- (i) There is no significant difference in the perceptions of male and female teachers towards developing 21<sup>st</sup> century life skills among secondary school students.
- (ii) There is no significant difference in the perceptions of teachers aged below 40 years and those aged 40 years and above towards developing 21<sup>st</sup> century life skills among secondary school students.
- (iii) There is no significant difference in the perceptions of teachers with an experience of less than 10 years and those with 10 years and above towards developing 21<sup>st</sup> century life skills among secondary school students.

### **DELIMITATIONS OF THE STUDY**

The study is confined to find out the influence of three demographic variables, viz., gender, age and experience on the perceptions of teachers towards developing 21<sup>st</sup> century life skills among secondary school students. Further, the study also takes into its purview the perceptions of teachers towards developing 21<sup>st</sup> century life skills among secondary school students with regard to four perceptual dimensions, viz., (i) Awareness and understanding of Life Skills Education, (ii) Perceived importance of Life Skills Education, (iii) Teachers' willingness and attitude towards Life Skills Education; and (iv) Barriers and challenges in Life Skills Education.

### **LIMITATIONS OF THE STUDY**

The present investigation is limited to explore the perceptions of 250 teachers (50 Headmasters and 200 School Assistants) working in 50 selected secondary schools located in the rural as well as urban areas in Visakhapatnam District of Andhra Pradesh.

### **METHODOLOGY**

#### **(a) Method of Research**

Since the present study involves collecting data with the help of survey, the investigators used Descriptive Survey method for the present investigation.

#### **(b) Sample**

The sample consisting of 250 teachers (50 Headmasters and 200 School Assistants) has been selected from 50 secondary schools located in Visakhapatnam district of Andhra Pradesh using 'Stratified Random Sampling' method. In this method, no significant group is left unrepresented and this gives a greater control over the sample. Here, in addition to randomness, stratification introduces a secondary element of control as a means of increasing precision and representativeness.

### (c) .Research Tool

The researchers used a well prepared questionnaire consisting of 44 items as the tool of research for the present investigation.

### (d) Administration of the tool

The tool was initially administered to 50 teachers (10 Headmasters and 40 School Assistants) under Pilot study. The measures of reliability, validity and objectivity of the tool have been calculated. Further, the researchers conducted item analysis for the items included in the tool. Out of 44 items selected for the tool, the discriminating power of 40 items has been found positive and is negative in respect of 4 items.

The items whose discriminating power is negative have been eliminated; and the final tool consists of 40 items, which are fool proof in all respects. The final tool has been administered to 250 teachers (50 Headmasters and 200 School Assistants) working in 50 Secondary Schools located in the rural as well as urban areas in Visakhapatnam district of Andhra Pradesh.

### (e) Analysis and Interpretation of data

The data collected has been analyzed and interpreted using different statistical techniques such as Mean scores, Standard Deviations and t-ratios; and are presented in the following table.

**Table showing t-values of different variables relating to the Perceptions of Teachers towards developing 21<sup>st</sup> century Life Skills among secondary school students**

S. No.	Variable		N	Mean	S.D.	t-ratio	Result
1	Gender	Male	120	112.33	29.83	0.32*	*Not Significant at 0.05 and 0.01 levels
		Female	130	113.58	32.48		
2	Age	Below 40 yrs	160	112.63	31.27	0.49*	*Not Significant at 0.05 and 0.01 levels
		40 yrs. & above	90	114.72	32.86		
3	Teaching Experience	Less than 10 yrs.	180	114.06	33.87	0.29*	*Not Significant at 0.05 and 0.01 levels
		10 yrs. & above	70	115.36	30.32		

### FINDINGS OF THE STUDY

On the basis of the analysis and interpretation of data, the researchers have arrived at the following findings and drawn the conclusions.



- (i) There is no significant difference in the perceptions of male and female teachers towards developing 21<sup>st</sup> century life skills among secondary school students.
- (ii) There is no significant difference in the perceptions of teachers aged below 40 years and those aged 40 years and above towards developing 21<sup>st</sup> century life skills among secondary school students.
- (iii) There is no significant difference in the perceptions of teachers with an experience of less than 10 years and those with 10 years and above towards developing 21<sup>st</sup> century life skills among secondary school students.

## **CONCLUSIONS**

From the findings of the study, it is concluded that Gender, Age and Experience of teachers have no influence on their perceptions towards developing 21<sup>st</sup> century life skills among secondary school students.

## **EDUCATIONAL IMPLICATIONS**

- (i) The study would help the teachers working in secondary schools realize the need for Life Skills Education at secondary level.
- (ii) The present study helps the teachers working in secondary schools develop necessary competencies to provide life skills education for their students.
- (iii) The study would help the secondary school teachers develop a positive attitude and right perceptions towards Life Skills Education at secondary level.
- (iv) The study would help the Academic Organizations like SCERTs, IASEs and the State Departments of Education to take necessary steps to provide in-service training for teachers working in secondary schools on various strategies and techniques of developing life skills among secondary school students.

## **REFERENCES**

1. Aparna, R (2011): Life Skill Education for Adolescents: Its Relevance and Importance. Journal of Education Science and Psychology, Vol. 2, Issue 19. ISSN: 1512-1801.
2. Austin Riedeman, A. B.(2021): The Impact of Life Skills Education on Secondary Students. A Master's Thesis submitted to Bethel University. Spark Repository.
3. Balasubramanian, S. & Karuppaiyan, S. (2019): A Study on Perception towards Life Skills Education and its influence on Academic Achievement. International Journal of Interdisciplinary Research and Innovations, Vol. 7, Issue 2, April-June, 2019.
4. Best, John W. and James V. Kahn (2003): Research in Education. New Delhi: Prentice Hall of India Private Limited.
5. Bhatia, K. K. (1974): Measurement and Evaluation in Education. Ludhiana: Prakash Brothers (Educational Publishers), 1974.
6. Botvin, G.J. & Griffin, K.W. (2014): Life Skills Training: Empirical Findings and Future Directions. The Journal of Primary Prevention, Volume 25, pp. 211-232.
7. Brown, S. (2011): Four elements of effective classroom instruction. Columbia: Teachers'College, Columbia University.
8. Canrinus, E. T., Helms-Lorenz, M., Beijgaard, D., Buitink, J., & Hofman, A. (2012). Self efficacy, job satisfaction, motivation and commitment: Exploring the relationships between indicators of teachers' professional identity. European Journal of Psychology of Education, 27(1), 115-132. <http://dx.doi.org/10.1007/s10212-011-0069-2>

9. Chai, C. S., Deng, F., Tsai, P. S., Koh, J. H. L. & Tsai, C. C. (2015). Assessing multidimensional students' perceptions of twenty-first-century learning practices. *Asia Pacific Education Review*, 16(3), 389-398.
10. Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112(1), 155-159. <https://doi.org/10.1037/0033-2909.112.1.155>
11. Çapa, Y., Çakıroğlu, J., & Sarıkaya, H. (2005). The development and validation of a Turkish version of teachers' sense of efficacy scale. *Education and Science*, 30(137), 74-81.
12. Çimen, E. (2022). The relationship between general self-efficacy and efficacy perception for skill teaching: a study on physical education and sports teachers (sample of the Mediterranean region). *Revista*, 26(1), e022031.
13. Dağhan, G., Nuhoglu Kibar, P., Menzi Çetin, N., Telli, E. & Akkoyunlu, B. (2017). 21st century learners' and teachers' characteristics from ict preservice teachers' perspectives. *Educational Technology Theory and Practice*, 7(2), 215-235.
14. Den Brok, P., Levy, J., Brekelmans, M., & Wubbels, T. (2005). The effect of teacher interpersonal behaviour on students' subject-specific motivation. *The Journal of Classroom Interaction*, 1(3), 20-33.
15. Dilekli, Y. & Tezci, E. (2016). The relationship among teachers' classroom practices for teaching thinking skills, teachers' self-efficacy towards teaching thinking skills and teachers' teaching styles. *Thinking Skills and Creativity*, 21, 144-151.
16. Field, A. (2013), *Discovering statistics using SPSS: IBM SPSS statistics*. Sage.
17. Freeman, D. & Johnson, K. (2005). Toward linking teacher knowledge and student learning. In D. Tedick (Ed.). *Second language teacher education international perspectives* (pp.73-95). Erlbaum Lawrence.
18. Gökbulut, B. (2020). The relationship between prospective teachers' educational beliefs and 21st century skills. *Turkish Studies – Educational Sciences*, 15, 127-141.
19. Günüş, S., Odabaşı, H.F. & Kuzu, A. (2013). Definition of 21st century student characteristics by teacher candidates: A twitter application. *Theory and Practice in Education*, 9(4), 436 - 455.
20. Holbrook, J. (2017). 21st century skills and science learning environments. In *Science Education: An International Course Companion*, edited by K. S. Taber and B. Akpan, 385–401. Sense.
21. Jackson, D. L. (2003). Revisiting sample size and number of parameter estimates: Some support for the n:q hypothesis. *Structural Equation Modeling*, 10(1), 128-141.
22. Kline, R. B. (2015). *Principles and practice of structural equation modeling*. Guilford.
23. Leigh, A., & Mead, S. (2005). *Lifting teacher performance. Policy Report - Progressive Policy Institute*.
24. Mardia, K.V. (1974) Applications of some measures of multivariate skewness and kurtosis in testing normality and robustness studies. *Sankhyā: The Indian Journal of Statistics, Series B*, 36, 115-128.
25. Mojavezi, A., & Tamiz, M. P. (2012). The impact of teacher self-efficacy on the students' motivation and achievement. *Theory and Practice in Language Studies*, 2(3), 483-491.
26. Neuman, L. W. (2016). *Social research methods: Qualitative and quantitative approaches* (S. Özge, Trans.). Publication Room.
27. Organisation for Economic Cooperation and Development [OECD]. (2005). *The definition and selection of key competencies. Executive summary*. Author. Retrieved from <http://www.oecd.org/pisa/35070367.pdf>

28. Pajares, M. F. (1992). Teachers' beliefs and educational research: Cleaning up a messy construct. *Review of Educational Research*, 62(3), 307-332.
29. Partnership for 21st Century Skills (P21) (2009). Framework for 21st century learning. Retrived from [www.p21.org](http://www.p21.org)
30. Scardamalia, M., Bransford, J., Kozma, B., & Quellmalz, E. (2012). New assessments and environments for knowledge building. In *Assessment and teaching of 21st century skills* (pp. 231-300). Springer Netherlands.
31. Schermelleh-Engel, K., Moosbrugger, H., & Müller, H. (2003). Evaluating the fit of structural equation models: Tests of significance and descriptive goodness-of fit measures. *Methods of Psychological Research Online*, 8(2), 23-74.
32. Schiefele, U., Streblow, L., & Retelsdorf, J. (2013). Dimensions of teacher interest and their relations to occupational well-being and instructional practices. *Journal for Educational Research Online*, 5(1), 7-37.
33. Sharif, A., & Cho, S. (2015). 21<sup>st</sup>-Century instructional designers: bridging the perceptual gaps between identity, practice, impact and professional development. *RUSC. Universities and Knowledge Society Journal*, 12(3), 2-85.
34. Shuell, T. J. (1996). Teaching and learning in a classroom context. In D. C. Berliner, & R. C. Calfee (Eds.), *Handbook of educational psychology* (pp. 726-764). Macmilan.
35. Skaalvik, E. M., & Skaalvik, S. (2007). Dimensions of teacher self-efficacy and relations with strain factors, perceived collective teacher efficacy, and teacher burnout. *Journal of Educational Psychology*, 99(3), 611-625.
36. Trilling, B., & Fadel, C. (2009). *21st century skills: Learning for life in our times*. Jossey-Bass.
37. Tschannen-Moran, M. & Woolfolk Hoy, A. (2001). Teacher efficacy: capturing an elusive construct. *Teaching and Teacher Education*, 17, 783-805.
38. Tschannen-Moran, M., Woolfolk-Hoy, A., & Hoy, W. K. (1998). Teacher efficacy: Its meaning and measure. *Review of Educational Research*, 68(2), 202-248.